UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,582	03/09/2004	Jefferson G. Shingleton	PWRL 1029-4	1118
22470 7590 04/14/2008 HAYNES BEFFEL & WOLFELD LLP			EXAMINER	
POBOX 366	DAY CA 04010	HALL, ASHA J		
HALF MOON BAY, CA 94019			ART UNIT	PAPER NUMBER
			1795	
			MAIL DATE	DELIVERY MODE
			04/14/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/796,582	SHINGLETON ET AL.
Office Action Summary	Examiner	Art Unit
	ASHA HALL	1795
The MAILING DATE of this communication ap Period for Reply	ppears on the cover sheet with the o	correspondence address
A SHORTENED STATUTORY PERIOD FOR REPLEWHICHEVER IS LONGER, FROM THE MAILING ID.  - Extensions of time may be available under the provisions of 37 CFR 1 after SIX (6) MONTHS from the mailing date of this communication.  - If NO period for reply is specified above, the maximum statutory period.  - Failure to reply within the set or extended period for reply will, by stature Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	DATE OF THIS COMMUNICATION  .136(a). In no event, however, may a reply be tind  d will apply and will expire SIX (6) MONTHS from te, cause the application to become ABANDONE	N. mely filed the mailing date of this communication. ED (35 U.S.C. § 133).
Status		
1) Responsive to communication(s) filed on 10.	is action is non-final. ance except for formal matters, pro	
Disposition of Claims		
4)  Claim(s) 1-18 and 33-38 is/are pending in the 4a) Of the above claim(s) is/are withdra 5)  Claim(s) is/are allowed. 6)  Claim(s) 1-18 and 33-38 is/are rejected. 7)  Claim(s) is/are objected to. 8)  Claim(s) are subject to restriction and/	awn from consideration.	
Application Papers		
9) The specification is objected to by the Examin 10) The drawing(s) filed on is/are: a) ac Applicant may not request that any objection to the Replacement drawing sheet(s) including the correct 11) The oath or declaration is objected to by the E	cepted or b) objected to by the edrawing(s) be held in abeyance. Se ction is required if the drawing(s) is ob	e 37 CFR 1.85(a). ejected to. See 37 CFR 1.121(d).
Priority under 35 U.S.C. § 119		
12) Acknowledgment is made of a claim for foreig a) All b) Some * c) None of:  1. Certified copies of the priority documer 2. Certified copies of the priority documer 3. Copies of the certified copies of the priority application from the International Burea * See the attached detailed Office action for a list	nts have been received. nts have been received in Applicat ority documents have been receiv au (PCT Rule 17.2(a)).	ion No ed in this National Stage
Attachment(s)  1) Notice of References Cited (PTO-892)  2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  3) Information Disclosure Statement(s) (PTO/SB/08)  Paper No(s)/Mail Date	4)  Interview Summary Paper No(s)/Mail D 5)  Notice of Informal F 6)  Other:	ate

Application/Control Number: 10/796,582 Page 2

Art Unit: 1795

### **DETAILED ACTION**

### Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 10, 2008 has been entered.

## Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35
 U.S.C. 102 that form the basis for the rejections under this section made in this
 Office action:

A person shall be entitled to a patent unless -

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- 3. Claims 1-5, 8, 12, and 33-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Shingleton (US Patent 6,058,930).

As to claims 1 and 33, Shingleton discloses a modular shade system (Figures 2A-2C, that said system is "modular" is inherent in its use of solar panels 34 that may be fixed or removed) with solar tracking panels (solar panels, 34) for use on a support surface (support surface is shown in Figure 2A as the surface to which the system is affixed via footing, 38) comprising: a series of

generally North-South oriented, spaced apart torque tubes (torque tube, 32, that is North-South oriented according to the first line of the abstract), each torque tube having an axis (as shown in Figure 2A); panels mounted to at least some of the torque tubes (as instructed in column 5, lines 57-60) to create spacedapart rows of panels along said torque tubes (that the panels are spaced apart is shown by the space between adjacent panels, 34, in Figure 13), at least some of the panels being solar collector panels (all of the panels, 34, are solar panels); a shade structure (this enhanced shading is provided by the panels) positioned at a selected location between selected ones of the torque tubes and above the support surface so to provide an enhanced shaded region thereunder (the panels are fixed to the torque tubes as described above); a support structure comprising: a first mounting assembly (torque arm 46, rod member 44, body portion of linear actuator 43, fixed mount 45 and bearing 40) for mounting each torque tube above the support surface for rotation about the axis of each said torque tube (mounting is shown in Figure 2A and the rotation motion is illustrated in Figure 2C) and a second mounting (footing, 38, and pier, 36) for supporting the shade structure at the selected location; and a tilting assembly as part of the first mounting assembly (actuator, 42, body portion of actuator 43, and fixed mount, 45) selectively rotating each torque tube about its axis (again, as shown in Figure 2C).

As to claim 2, Shingleton discloses the system according to claim 1, wherein the first mounting assembly of Shingleton comprises: pivot connectors (the pivot connectors between the solar cell mount and torque arm 46, are clearly

Application/Control Number: 10/796,582

Art Unit: 1795

visible in Figure 2B and the pivoting motion of the solar panels, 34, with respect to the first mounting assembly is demonstrated in Figures 2A-2C); Southside supports (fixed mount 45) pivotally connected to the torque tubes by the pivot connectors (it is clear from Figure 2B that 25 is pivotally connected to torque tubes 32 via the first mount assembly including the pivot connectors shown in the figure; the pivoting motion is shown in Figure 2C); and Northside supports (torque arm 46) pivotally connected to the torque tubes by the pivot connectors (as also shown in Figure 2B).

As to claim 3, Shingleton discloses the system according to claim 1, wherein the Southside and Northside (i.e., fixed mount 45 and torque arm 46, respectively) comprise vertical posts in the representation of Figure 2A.

As to claim 4, Shingleton discloses the system according to claim 1, wherein the second mounting assembly of Shingleton comprises vertically extending posts (pier, 36) supporting East-West extending shade support bars (the torque tubes, 32, also function as East-West extending shade support bars as shown in Figure 2A).

As to claim 5, Shingleton discloses the system according to claim 1, wherein the tilting assembly of Shingleton comprises a drive element (horizontal tracker driver described in column 5, lines 64-67) associated with each torque tube, a drive element coupler operably, coupling each drive element (generally horizontal rod member, 44), and a driver (linear actuator, 42) drivingly coupled to at least one drive element (the actuator driver, 42, is coupled to 44 as shown in Figure 2A) to simultaneously rotate the torque tubes about their associated axes

and simultaneously tilt the panels mounted to the torque tubes (as illustrated best in Figure 2C).

As to claim 8, Shingleton discloses the system according to claim 1, wherein the solar panels (34) of the system of Shingleton are "attached" to the torsion tube according to teachings in column 2, lines 36-37. Such an attachment step implies that the solar cells and torsion tube are not a single, monolithic apparatus (i.e., that different solar cells may be attached to the apparatus in a "moldular" fashion).

As to claim 12, Shingleton discloses the system according to claim 1, wherein the modular panels are solar panels (column 5, line 57) or PV modules.

As to claims 34 and 35, Shingleton explains that the modular shade system is anchored to the "earth" via the pier footing (abstract). Shingleton further explains, in column 8 lines 41-45, that the term "earth" may mean "soils and natural surfaces" (i.e., the ground) or "building rooftop[s]" which implies that the support surface comprises a roof.

# Claim Rejections - 35 USC § 103

- 4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) as applied to claim 1 above, and in further view of Olah (US Patent 6,399,874).

As to claims 6 and 7, Shingleton discloses the system according to claim 1, but fails to disclose is that the solar collector panels comprise a light concentrator type of solar collector panel.

Olah discloses a solar energy module that uses a Fresnel lens as a light concentrator (title and abstract as well as column 2 lines 7-10). As Olah explains in column 1 lines 25-35, such concentrators are used to "increase the electrical output" of the solar energy cell by "increasing the intensity of the sunlight" striking the cell. It would have been obvious to one of ordinary skill in the art at the time of the invention to add the solar concentrator of Olah to the modular shade system of Shingleton in order to increase the electrical output of the solar cells in said system by increasing the intensity of the sunlight striking each of them. This modified shade system of Shingleton would, then, contain solar collector panels that comprise a light concentrator type of photovoltaic (PV) panel.

6. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) as applied to claim 8 above, and in further view of Berman et al. (US Patent 4,663,085).

As to claims 9-11, Shingleton discloses the system according to claim 8, but fails to include that the modular panels comprise light-transmissive panels.

Berman et al. disclose a light-transmissive solar panel in Figure 1
(transparent photovoltaic panel, 10) which may be used on a roof-top (see Figure

7) to provide transmitted light that is not used for photovoltaic conversion for other purposes such as illuminating the interior of a dwelling (abstract, last sentence). Further, the PV panels of Berman et al. (transparent photovoltaic panel, 10) are light-transmissive PV panels. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the light-transmissive solar panel of Berman et al. to the modular shade system of Shingleton in order to provide light for non-photovoltaic purposes such as illuminating the interior of a dwelling. In this modified system, the light-transmissive panels would be placed adjacent to one another (as instructed by Shingleton in Figures 9A-9C) and, since the light transmissive panels are also PV panels, the modular panels comprise PV panels and light-transmissive panels.

7. Claims 13, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) as applied to claim 12 above, and in further view of Catella et al. (US Patent 4,611,090).

In regard to claim 13, 14, and 17, Shingleton discloses the system according to claim 12, but fails to teach protective panels mounted to opposite and covering substantially the entire the shading system subassembly opposite the lower surfaces of the PV modules protective panels comprising of a sheet of material. Shingleton also fails to disclose that the semi-rigid support member and the protective panel that forms a part of it may be composed of steel, aluminum, cement board, perforated cement board, and phosphorescent material, or plastic; and are perforated in the sense that they contain a total of nine holes.

Catella et al. disclose an assembly (semi-rigid support member, 10) for a structural support for a photovoltaic (PV) module in Figure 1. Catella et al. further explain that the semi-rigid support member (10) and the protective panel that forms a part of it may be composed of steel, aluminum, or plastic/ polycarbonate(column 4, lines 18-28) and are perforated in the sense that they contain a total of nine holes (see Figure 1). The construction of the assembly contains a protective panel mounted to the photovoltaic module subassembly in the form of rib stiffeners (20) and a rectangular structure (23) opposite the lower surfaces to the PV modules (as shown with a mounted photovoltaic module, 22, in Figure 4) and the PV modules are encased in a rigid metal framework such as a metal casing (which each panel is separated by flanges 34) and a rigid transparent cover material/a sheet of material is the rigid transparent cover (col. 1; lines; 31-24). Catella et al. explain that the purpose of the protective panel is both to support the photovoltaic module (column 6, lines 65 – 8) and to "secure electrical wiring connections between the photovoltaic module and adjacent photovoltaic modules or a current collecting means" (column 7, lines 30-34). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the protective panel of Catella et al. to the modular shade system of Shingleton et al. in order to both support the photovoltaic module and secure electrical wiring connections between the photovoltaic module and adjacent photovoltaic modules or a current collecting means.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) and Catella et al. (US Patent 4,611,090) as

Application/Control Number: 10/796,582

Art Unit: 1795

applied to claim 13 above, and in further view of Berman et al. (US Patent 4,663,085).

As to claim 15, modified Shingleton discloses the system according to claim 13, but fails to provide is that the PV modules are constructed to permit some light to pass therethrough.

Berman et al. disclose a light-transmissive solar panel in Figure 1 (transparent photovoltaic panel, 10) which may be used on a roof-top (see Figure 7) to provide transmitted light that is not used for photovoltaic conversion for other purposes such as illuminating the interior of a dwelling (abstract, last sentence). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the light-transmissive solar panel of Berman et al. to the combination of Shingleton and Catella et al. as applied to claim 13 above in order to provide light for non-photovoltaic purposes such as illuminating the interior of a dwelling.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930), Catella et al. (US Patent 4,611,090) as applied to claim 13 above and in further view of Yamawaki et al. (US patent 6,489,552 B2).

As to claim 16, modified Shingleton discloses the system according to claim 13 above, but fails to teach that the protective panels have a lower surface protective panel surface at least substantially the entire lower protective panel surface being convex.

Yamawaki et al. disclose a solar cell module (photovoltaic cell module tile body and photovoltaic module, 1 and 6, respectively, in Figure 1A) for covering a roof board. The photovoltaic module tile body (1) acts as a protective panel for the photovoltaic module (6). As Yamawaki et al. teach in column 5, lines 1-3, said photovoltaic tile body has a recessed convex portion/the entire lower protective panel surface being convex (rectangular terminal-box storing recess, 3) which provides a space for the terminal box associated with the photovoltaic module or solar cell (6). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the recessed convex portion of the protective panel of Yamawaki et al. to the modular shade system of the modified Shingleton et al. in order to provide a space for the terminal box associated with the solar cell.

10. Claim 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) as applied to claim 8 above, in view of Blieden et al. (US patent 4,153,813).

Roderick et al. discloses all the features of claim 1 above but fail to teach that the supplemental panels comprise phosphorescent panels to provide passive nighttime illumination or that the supplemental panels comprise illuminated panels.

Blieden et al. disclose a luminescent member (16) which consists of a luminescent agent capable of phosphorescence (column 1, line 33-34) that is optically coupled to a photovoltaic cell (18) in Figure 3. Blieden et al. explain that the purpose of said luminescent member is to aid in the collection of low

angle incident light (column 1, lines 57-61). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the luminescent member of Blieden et al. to the modular shade system of Shingleton in order to aid in the collection of low angle incident light. Doing so would automatically provide passive nighttime illumination beneath the support structure of Shingleton. Finally, panels in said combination of the devices of Roderick et al. and Blieden et al. are illuminated by virtue of their inclusion of the luminescent member.

11. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) as applied to claim 33 above, in view of Morton (US Patent 6,341,451 B1).

Shingleton discloses all the features of claim 33 above, but fails to provide that the support surface comprises a vehicular parking area having parking stalls at the enhanced shaded region and the traffic regions adjacent to the parking stalls.

Morton teaches a portable garage apparatus (title) that has a roof (top wall structure, 12) that supports solar cells (see Figure 1 and solar energy panels 21,22). As Morton explains in the abstract, this structure is deal for "providing shelter to a vehicle" when the owner of said vehicle does not have a garage. As can be seen in Figure 1, this potable garage has a parking stall (portion of the floor, 13, enclosed by the walls of the structure). Further, Morton discloses the use of a ramp (26) leading to the opening of the garage "being adapted to allow a vehicle to enter the building structure" (column 3, lines 64-66). This implies that

Application/Control Number: 10/796,582

Art Unit: 1795

the region adjacent to the ramp (26) is a traffic region which is also adjacent to the parking stall region defined above. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the portable garage apparatus of Morton in conjunction with the roof-mounted modular shade system of Shingleton in order to provide shelter to a vehicle when the owner of said vehicle does not have a garage.

12. Claim 37 and 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) and Morton (US Patent 6,341,451 B1) as applied to claim 36 above, in view of Stahl et al. (5,588,829).

With respect to claims 37, Shingleton discloses the protective panels modular shade system as applied to claim 36 above, and Shingleton discloses the rotation of multiple rows: first, second, third and fourth of said rows of panels col.1; lines: 28-35), but fails to disclose comprising: and first and second of said stationary shade structures located between the first and second rows of panels and between the third and fourth rows of panels, respectively.

Klintworth discloses stationary and moveable a roof tile comprised of rows (col.1; lines: 6-10) and moveable arrange rows of grates plates are arranged in their entirety or in groups on frames which are carried by vertical guides and that this arrangement modifies the movement (col.1; lines: 10-13 & 23-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the stationary and moveable a roof tile of Klintworth to the

Application/Control Number: 10/796,582 Page 13

Art Unit: 1795

protective modular shade panels of modified Shingleton in order to modify the movement of the system.

With respect to claim 38, Shingleton discloses rows of panels have row lengths and said stationary shade structures have structure lengths (Figure 9A-C), but fails to disclose the row lengths being about equal to the structure lengths, said row lengths and structural lengths extending parallel to one another and parallel to the support surface. *In Gardner v. TEC Systems*, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device (see MPEP 2144.04).

### Response to Arguments

Claim Rejections - 35 USC § 112

13. Due to the Applicant's amendments to the specification, the 35 USC §112 rejection for claims 1-18 and 33-38 is withdrawn.

Claim Rejection under 35 USC §102 and 35 USC § 103

14. In regard to claims 1 and 33, the Applicant argues that there is nothing in the rejection stating that the Shingleton patent discloses or suggest the use of a stationary shade structure positioned to a fixed location.

The Examiner respectfully disagrees. Shingleton (US 6,058,930) discloses the at the solar panels/structure can be installed upon rooftops/fixed location (col .8; lines: 40-45) and further depicts in Figures 7 and 8 wherein the structure would provide shading below in the event solar radiation impinges on the structure. It is inherent that rooftops provides shading, hence solar panels provided onto of rooftop will also provide shading.

15. With respect to claim 13, the Applicant argues that the rib stiffeners 36 and rectangular structure 37 of Catella do not constitute a protective panel. The Applicant further argues that there is no reason to modify the cited art to arrive at the invention of claim 13 because there was no recognition of the desirability or need to do so.

The Examiner respectfully disagrees. Catella et al. discloses an assembly (semi-rigid support member, 10) for a structural support for a photovoltaic (PV) module in Figure 1. The construction of the assembly contains a protective panel mounted to the photovoltaic module subassembly in the form of rib stiffeners (20) and a rectangular structure (23) opposite the lower surfaces to the PV modules (as shown with a mounted photovoltaic module, 22, in Figure 4) and the PV modules are encased in a rigid metal framework such as a metal casing (which each panel is separated by flanges 34) and a rigid transparent cover material/a sheet of material is the rigid transparent cover (col. 1; lines; 31 -24). Catella et al. explains that the purpose of the protective panel is both to support the photovoltaic module (column 6, lines 65 - 8) and to "secure-electrical wiring

connections between the photovoltaic module and adjacent photovoltaic modules or a current collecting means" (column 7, lines 30-34).

16. As to claim 36, In response to applicant's argument that even if one were to assume that it would have been obvious to combine the teachings of Shingleton and Morton, the resulting structure would not bear much resemblance to the invention of claim 36. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). For example, Morton teaches a portable garage apparatus (title) that has a roof (top wall structure, 12) that supports solar cells (see Figure 1 and solar energy panels 21,22). As Morton explains in the abstract, this structure is deal for "providing shelter to a vehicle" when the owner of said vehicle does not have a garage. As can be seen in Figure 1, this portable garage has a parking stall (portion of the floor, 13, enclosed by the walls of the structure). Further, Morton discloses the use of a ramp (26) leading to the opening of the garage "being adapted to allow a vehicle to enter the building structure" (column 3, lines 64-66). This implies that the region adjacent to the ramp (26) is a traffic region which is also adjacent to the parking stall region defined above.

- 17. As to claim 37, in response to applicant's argument that Klintworth is not analogous art and it is not in the field of the applicant's endeavor nor is it reasonably related to the particular problem with which applicant was involved is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Shingleton discloses rows of panels that have row lengths and said stationary shade structures have structure lengths (Figure 9A-C), but fails to disclose the row lengths being about equal to the structure lengths, said row lengths and structural lengths extending parallel to one another and parallel to the support surface.
- 18. As to claim 38, in response to applicant's argument that the dependant claim 38 is allowable as depending form allowable claim 37 as well as reciting the advantageous feature of the rows and shade structures having generally equal lengths to maximize the shading between the rows.

The Examiner respectfully disagrees. Shingleton discloses rows of panels have row lengths and said stationary shade structures have structure lengths (Figure 9A-C). In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir.1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having

the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device (see MPEP 2144.04).

### Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASHA HALL whose telephone number is (571)272-9812. The examiner can normally be reached on Monday-Thursday 8:30-7:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/796,582 Page 18

Art Unit: 1795

AJH /A. H./ Examiner, Art Unit 1795

/Alexa D. Neckel/

Supervisory Patent Examiner, Art Unit 1795